

Date: Sun, 16 May 93 12:00:23 PDT  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #593  
To: Info-Hams

Info-Hams Digest                      Sun, 16 May 93                      Volume 93 : Issue    593

Today's Topics:

                    Another AM Question  
                    Charger time for Alinco DJ-580T  
                    no-code defense  
                    Possible to parallel x-formers??  
                    RACES Bulletin #274  
                    Recommendations wanted for SAT QSO's  
                    repeaterfrequencies (2 msgs)  
                    Welcome to rec.radio.info!  
                    What is circular polarization?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Mon, 3 May 1993 16:26:19 GMT  
From: usc!sdd.hp.com!apollo.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!hp-pcd!  
hplsla!tomb@network.UCSD.EDU  
Subject: Another AM Question  
To: info-hams@ucsd.edu

lkraft@core.rose.hp.com (Lyle Kraft) writes:

> As far as who sees these sidebands, let me modify the scenario. Say  
> you now have an airborne receiver that circles the transmitting  
> antenna in sync with the beam. Does the flying receiver see these  
> sidebands (assuming the receiver sees no change in amplitude during  
> the trip around)? I don't believe so, but a fixed observer will  
> see the modulation. I'm just curious as to whether it's something

> that is created as part of the detection process, or do these  
> sidebands accompany the carrier to the far regions of space (in  
> a huge rotating disk pattern).

If the amplitude at the receiver doesn't change, then you won't detect sidebands there. Oops, well, unless they are caused by phase modulation (changing distance can do this, as in a Doppler scanning receiving antenna). I think it's fair to say that the sidebands are created as part of the modulation process; in this case, a receiver directly above the antenna (assuming perfect symmetry and unvarying propagation) would see no modulation, as would the airborne receiver you describe (what a ride!). You have a spatially dependent modulation process, and there are points (or trajectories) in space that don't see that process...

If you could take a "snapshot" of the RF fields some time after you start the process and compare it with a snapshot of a "normal" AM signal with the same modulation frequency, in one case you would see concentric spheres of maxima alternating with minima, and in the other, it would be a spiral in the plane of the antenna and uniform intensity above and below the antenna. The spiral would appear to turn in time, but the concentric spheres would simply expand...

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Date: Mon, 3 May 1993 16:01:28 GMT  
From: usc!sdd.hp.com!apollo.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!hp-pcd!  
hplsla!tomb@network.UCSD.EDU  
Subject: Charger time for Alinco DJ-580T  
To: info-hams@ucsd.edu

Chris Oesterling <chris@angus.mi.org> writes:

>Hi. I just purchased a 12v 800ma ni-cad for my Alinco DJ-580T ht. I'm not  
>sure of the model number of the charger but it's the standard one which  
>came with my radio. The manual (yes I did read it) suggests 14 hours for  
>the 7.2v battery. Any nice person have the bigger battery? Thanks.

Yes. -- Oh, I guess you wanted to know how long to charge it ;-)  
The 12 volt Alinco battery I have (EBP-22N) is labeled 700mAH, which is  
the same as the "standard" battery, just higher voltage. It uses  
different contacts in the charger base, and charges in the same time.  
(Though I'm now using the WW Associates fast charger, which is a big  
help. When it's done, it switches to trickle and lets you know.)

I think the charge time for the 12V battery is mentioned on the little  
sheet that comes in its box...

73, K7ITM

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Date: 15 May 93 17:17:06 GMT  
From: saimiri.primate.wisc.edu!sdd.hp.com!usc!sol.ctr.columbia.edu!news.kei.com!  
ddsw1!indep1!clifto@ames.arpa  
Subject: no-code defense  
To: info-hams@ucsd.edu

In article <X23e4B4w165w@jackatak.raider.net> jackhill@jackatak.raider.net (Jack GF Hill) writes:

>Governments who collectively make the world-wide rules... The ARRL  
>\*IS\* the representative body for US Amateur Radio. Hands down. No  
>argument. NO COMPETITION. The ARRL is THE representative body.

Only by default and because of significant lobbying. Personally, I can count on the fingers of one hand the number of actions the ARRL has taken that I have personally supported. I have never been, nor will I ever be, an ARRL member.

>Now, this may rankle you, but it is just the facts. In order to change  
>this, you will have to a) develop a competitive representative body and  
>get all the governments, including the FCC, to recognize your group  
>instead of the ARRL; or b) join the ARRL, vote, elect people who  
>support some of your opinions and feelings and make your changes from  
>within.

If you want to change the situation in Cuba, move there and vote against Castro. Might work if you could find enough people willing to do it, but in the absence of a clear, mass movement to do so, people like me will NOT join because our single votes will NOT change the status quo without that mass movement.

>RI... ask LOTS of hams who have been licensed since BEFORE the  
>incentive licensing program nearly made us all extinct...and check

A good example of why joining and voting won't work. As I remember, the vote within the ARRL itself was overwhelmingly against incentive licensing. Incentive licensing, the very thing that's depleted our numbers and aggravated so many people, was a creation of the ARRL exclusively, and was almost universally opposed by hams of the time. Out of the hundreds of QSOs I had during the time, and the thousands I listened to, I heard exactly ONE person say something favorable about incentive licensing.

>your percentages again....closely...people with memories and no desire  
>to repeat the stupidity of 1968 are pretty well in favor of the  
>licensing scheme that permits licenses without a CW requirement...

Thanks to the ARRL, everyone's now favoring removing a method of communication that, while other better forms are available, can still be essential. As someone else said in another article, you may only really need CW once... but that one time, you'll REALLY need it. I've been there. I used to be able to depend on 400,000 people available who understood it just in case I needed to communicate with it; now I have a mental picture of people standing around asking, "What's that strange beeping noise?"

>that these new hams are upgrading, at the rate of nearly 2 of every 3,

Thank goodness!

--

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+-----+
|  Cliff Sharp  |      clifto@indep1.chi.il.us   OR  clifto@indep1.uucp   |
|   WA9PDM     |      Use whichever one works                               |
+-----+
```

Date: Tue, 4 May 1993 17:21:52 GMT

From: usc!sdd.hp.com!apollo.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!hp-pcd!  
hplsla!tomb@network.UCSD.EDU

Subject: Possible to parallel x-formers??

To: info-hams@ucsd.edu

exualan@exu.ericsson.se (Alan Malkiel) writes:

>In the junk box sit 2 different 10Amp (appx.), 18V (appx.) used  
>transformers. The question: Can I wire them in parallel? If so,  
>which is better, before or after the bridge rectifier (obviously,  
>if after, then I will need 2 bridges). Also, how much difference  
>will a volt or 2 in the secondary make? I do have access to the  
>windings so adjustments are possible.

As another poster noted, it's bad news to directly parallel two transformers that don't have identical turns ratios. Based on winding resistances and leakage inductances, it's pretty easy to calculate the resulting current which will heat the resistance it flows through.

As an alternative to direct paralleling, or paralleling after the rectifier, here's an alternative to consider: use a tapped choke (really an autotransformer) connected between the secondaries (or even the primaries). The choke has to handle the current you want to deliver, but it will have only the difference between the two secondary voltages across it: you connect one side of the secondaries together (being sure you have the phase right, and the choke between the

other two leads. Take the output (to the bridge) from the choke centertap. If the "centertap" is offcenter, then you can adjust the current sharing between the two transformers.

If you have easy access to the secondaries of the two transformers and can adjust them to practically identical voltages, then direct paralleling is a reasonable option. It may be easier to \_add\_ turns than to take them away, if there's any space left between the current winding and the core. Just use appropriate-gauge insulated hookup wire to add a turn or two. For finer adjustment, put the turns in series with the primary; you could either add or subtract voltage this way.

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Date: 16 May 93 17:55:34 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: RACES Bulletin #274  
To: info-hams@ucsd.edu

Bid : \$RACESBUL.274

TO: ALL EMERGENCY MANAGEMENT AGENCIES VIA AMATEUR RADIO  
INFO: ALL RACES OPERATORS IN CA (ALLCA: OFFICIAL)  
ALL AMATEURS U.S. (@ USA: INFORMATION)  
FROM: CA STATE OFFICE OF EMERGENCY SERVICES (W6HIR @ WA6NWE.CA)  
2800 Meadowview Rd., Sacramento, CA 95832 (916)262-1600  
Landline BBS open to all: (916) 262-1657  
RACESBUL.274 DATE: May 17, 1993  
SUBJECT: MGT - The committed volunteer - Part 3/3

Other people may serve only when they are needed to perform INFREQUENT and usually unscheduled tasks. A few examples include extra operators for a major incident, installation or maintenance activity, computer programmers, special projects, etc. I use as an example one volunteer we have who is a computer communications program expert. If a terminal hangs up we may need his advice fast. One phone call and the problem is usually cleared in minutes. His advice is invaluable and priceless. He does not come in to the office and serve. He may respond into the field on an incident perhaps once a year. But you can see how it's impossible to put a price tag on his value to us without his having to meet radio nets or serve some expected hours per month.

You and, more importantly, your Radio Officer will know the capabilities and talents of each volunteer. It's your Radio Officer's responsibility to recruit enough people with the likes and skills to provide depth and redundancy.

As your Radio Officer's supervisor it is your role to motivate, lead and inspire. Let your volunteers be the best they can be --- and they will!

--- Stan Harter, KH6GBX

EOM

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RACES Bulletins are archived on the Internet at ucsd.edu in hamradio/races and can be retrieved using FTP.

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Date: Thu, 6 May 1993 17:09:20 GMT  
From: usc!sdd.hp.com!apollo.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!hp-pcd!hplsla!dickrb@network.UCSD.EDU  
Subject: Recommendations wanted for SAT QSO's  
To: info-hams@ucsd.edu

Greetings -

The SHARC (Soper Hill Amateur Radio Club whose members work for Hewlett-Packard in Everett, Washington) folks are looking for recommendations for a transceiver to be used for QSO's thru the HAM satellites. Ideally, the radio we choose will allow control via computer so that it can be operated from a remote site by members of the club.

We want reports on the good AND the perceived bad transceivers that are presently available on the new or used market.

Thanks,

Dick - W7WKR

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Date: Tue, 4 May 1993 17:33:03 GMT  
From: usc!sdd.hp.com!apollo.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!hp-pcd!hplsla!tomb@network.UCSD.EDU  
Subject: repeaterfrequencies  
To: info-hams@ucsd.edu

uk08173@mik.uky.edu writes:

> Would someone please mail me the repeater frequencies for the Ky,  
>Ind, and Ohio 2m and 70cm. I know that this is a lot, but if nothing  
>else can you send Ky :) I realize that the directories are only a few  
>dollars, but after just footing the bill for a new HT, I couldn't afford  
>to pay attention.

I can't help you with the Ky area, but...

Though the few \$ for the directory isn't an issue with me, I do have a problem with the ARRL directory format. As a result, I've started a spreadsheet database. Specifically, I don't like the geographical classifications the ARRL book uses. Sometimes repeaters will be listed as "Suchandsuch Mt." and sometimes as "Citysuchandsuch". Often I have no idea where the mountain is. And often the city is a tiny town that I don't know. Right now, my database has things like

bigcity:smallercity:mountain

for locations. I hope to add longitude and latitude coordinates and some rough indication of radius of coverage (realizing that it's often not very symmetric). I also have a column for "county" which is useful at least for my home state. Another column has "verified by" for the call of a station that verified that the repeater really exists and uses such-and-such CTCSS tone and ... Anyone have suggestions for other entries? Anyone want a copy of what I have so far (2 meters for Washington and SW BC-Vancouver/Victoria area)?

Also, I find it very nice to be able to sort on location or frequency or ..., instead of being stuck with the fixed format of the book.

73, K7ITM

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Date: 16 May 1993 18:00:05 GMT  
From: usc!howland.reston.ans.net!usenet.ins.cwru.edu!cleveland.Freenet.Edu!  
dd711@network.UCSD.EDU  
Subject: repeaterfrequencies  
To: info-hams@ucsd.edu

Tom, K7ITM wrote regarding the inadequacies of the current ARRL repeater directory. I believe this may have been a topic of discussion some time ago, but would like to agree with his comments about the geographical designations. I bought a new directory in '92 to replace a five year old guide. I was amazed to find cities I am familiar with placed in impossible areas of their states, and repeaters in or adjacent to a known city listed under seemingly odd locators. I realize that a national directory is a large undertaking, but we ARRL members and the purchasers of the guide are paying for the staff who puts out this product. I, too, have begun compiling my own lists as I travel, and organize the information in a manner useful to me. The book format of the ARRL guide does not let me rip out the

repeater and packet info I really have no use for on my trips.  
Next trip I plan to ditch the ARRL book, use my customized  
guide and perhaps try some of the new map cards now available.  
When the ARRL book again becomes actually useful, they may  
get me back!

--

Chuck Reti		"Kill
Internet:dd711@cleveland.freenet.edu		Ugly
Packet Radio:wv8a@wb8zpn.#semi.mi.usa.na		Radio"
Ampnet:wv8a@wv8a.ampr.org[44.1.2.0.191]		- F. Zappa

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Date: Sun, 16 May 1993 15:45:00 GMT  
From: usc!howland.reston.ans.net!newsserver.jvnc.net!yale.edu!nigel.msen.com!  
fmsrl7!destroyer!cs.ubc.ca!alberta!adec23!ve6mgs!rec-radio-info@network.UCSD.EDU  
Subject: Welcome to rec.radio.info!  
To: info-hams@ucsd.edu

Archive-name: radio/rec-radio-info/welcome  
Last-modified: \$Date: 1993/05/03 10:36 \$  
Version: \$Revision: 1.04 \$

\*\*\* Welcome to rec.radio.info! \*\*\*

Welcome to rec.radio.info, a group that aims to provide a noise-free source  
of information and news for the entire rec.radio hierarchy.

Two introductory articles about rec.radio.info are posted to the group and  
to news.answers every two weeks. You are now reading the first article, which  
explains what rec.radio.info is, and answers some Frequently Asked Questions.  
The second article is titled "Submission Guidelines", and you only need to  
read it if you want to submit an article to rec.radio.info.

You can skip to the next section of this article by searching for the next

" -- " string. The sections available are:

- What is the purpose of rec.radio.info?
- Why are messages almost always cross posted to rec.radio.info?
- What is a 'follow-up', and what does 'moderated' mean?
- OK, so now I know what 'moderated' means. Tell me more.
- What type of material is considered inappropriate?
- I do not have access to news, how can I get the information posted to  
rec.radio.info?
- Will the material appearing in rec.radio.info be archived somewhere?
- I have a regular posting with timely information, is there a way to  
speed up it's delivery, or automate for more convenience?

-- What is the purpose of rec.radio.info?



The purpose or charter of rec.radio.info is to provide the Usenet community with a resource for information, news, and facts about any and all things radio.

All the other rec.radio groups are intended for discussions and general chit chat about radio. Rec.radio.info will contain informational, factual articles only. Follow-ups are redirected to an appropriate other group, and further discussion (if any) will not take place in rec.radio.info.

In order to ensure that rec.radio.info contains only appropriate articles, it was decided to create the group as a moderated newsgroup.

-- Why are messages almost always cross posted to rec.radio.info?

It provides a "tag" for each article to be assembled into a filtered presentation in rec.radio.info (even with cross-posting, only one message, with a unique Message-ID, is propagated across the net). This tag also facilitates a pre-existing method of dropping or cancelling the articles locally within the discussion groups if you don't want to see them. This accommodates individuals who want to separate the bulletins from the discussions, discussions from the bulletins, as well as those who are adamant about not reading another newsgroup and wanted to see everything all in one basket.

With the total size of Usenet (in number of newsgroups and total traffic) doubling every year or so, this is no insignificant contribution to reducing information noise and chaos. Making the discussion groups a catch-all, and making extra newsgroups filters on that catch-all, is also the most realistic way to implement such a scheme (It's not intuitively obvious what the charter, contents, and general appropriate topics for each and every newsgroup are. Seeing FAQ's and charter/intro postings in the home newsgroup is beneficial for new readers).

By cross-posting one only is adding a few tens of bytes to each bulletin (to specify the extra group on the Newsgroups line), but are adding the capability for very powerful filtering features available on most news servers, listservers and readers. Your local news guru could probably explain these features in more detail.

In rn, for example, according to Leanne Phillips in her rn kill-file FAQ, add a line of the form:

```
/Newsgroups:.*[ ,]rec\.radio\.info/h:j
```

either in ~/News/KILL (if you don't want to see rec.radio.info articles anywhere) or ~/News/rec/radio/amateur/misc/KILL (if you don't want to see them just in rec.radio.amateur.misc). The latter method means your kill file will only be consulted during rec.radio.amateur.misc (and hence runs more efficiently), and will probably work for most people.

In nn, according to Bill Wohler in his nn FAQ, add a line of the form:

rec.radio.info:!s/:^  
in ~/.nn/kill (if you don't want to see rec.radio.info articles anywhere), or  
put the following lines:

```
sequence
rec.radio.info
rec.radio.
```

at the end of ~/.nn/init in order to see all the rec.radio.info bulletins first,  
then read the remaining rec.radio.\* without the bulletins.

-- What is a 'follow-up', and what does 'moderated' mean?

If you are new to Usenet and are not familiar with the terminology, you might  
want to read the general introductory articles found in the newsgroup  
news.announce.newusers. Doing so will make your life on the net much easier,  
and will probably save you from making silly beginner's mistakes.

If you think that at this moment you are reading an echo, a conference, or  
a bulletin board, I'd also strongly suggest a trip over to  
news.announce.newusers.

For the rest of this article, I will assume you have a basic knowledge of  
Usenet terminology and mechanics.

A moderated group means that any article that needs to be posted to the group  
has to be accepted by the moderator of the group. Since we need to ensure that  
followups to an article (discussion) do not show up in the rec.radio.info  
newsgroup, the 'Followup-To:' header line contains a newsgroup that is  
appropriate for discussions about the specific article.

-- OK, so now I know what 'moderated' means. Tell me more.

Rec.radio.info is a moderated newsgroup, which means that all articles  
submitted to the group will have to be approved by the moderator first.

The current moderator of the group is Mark Salyzyn. Submissions to  
rec.radio.info can be posted, or e-mailed to:

rec-radio-info@ve6mgs.ampr.ab.ca

Comments, criticisms, suggestions or questions about the group can be e-mailed  
to:

rec-radio-request@ve6mgs.ampr.ab.ca

But before you do so, please be sure to check out the "Submission Guidelines"  
article.

The influence of the moderator should be minimal and of an administrative  
nature, consisting chiefly of weeding out obviously inappropriate articles,

while making sure correct headers etc. are used for the appropriate ones.

-- What type of material is considered inappropriate?

There are three broad categories of articles which will be rejected by the moderator:

- 1) Requests for information: rec.radio.info is strictly a one-way street. I receive information in my mailbox; I then post it to rec.radio.info. Requests for specific information belong in the normal discussion newsgroups. If your request gets answered, you might consider passing the answer on to rec.radio.info, though. Especially if you can edit it into a informational, rather than a discussion, format.
- 2) Obvious discussion articles, or articles that appear unsubstantiated.
- 3) Commercial stuff: a relatively unbiased test of a radio product would be accepted, but any hint of for-profit might be reason for rejection. For three reasons: This is not the purpose of the list, for-profit is a controversial topic, and this list may be passed onto Amateur Packet Radio (where for-profit is prohibited except under certain provisos).

rec.radio.swap may be more deserving of the posting in any matter.

Similarly, copyrighted material generally cannot be used. If it's TRULY worthwhile to the net, I would recommend obtaining permission from the copyright holder. Please note the source, and if permission was given. I reserve the right to make the final decision concerning appropriateness in all situations. In most cases, a brief summary of, or pointer to, the copyrighted information may be all I can allow.

-- I do not have access to news, how can I get the information posted to rec.radio.info?

brian@UCSD.EDU (Brian Kantor) has kindly supplied a mail list server for rec.radio.info. Non of the articles will be digested, due to their size, so you will receive individual mailings for every article posted to the group.

Mail sent to radio-info@ucsd.edu will be forwarded to the moderator and thus is an alias to rec-radio-info@ve6mgs.ampr.ab.ca

To subscribe and unsubscribe via the listserver; the format for that is

```
sub address radio-info
unsub address radio-info
```

where 'address' is your full mailing address. Send this request to

listserv@ucsd.edu

Note that the server will automatically delete any address that bounces mail. If you leave the address portion blank, it will try to deduce your address from the mail headers. This may not work if you are on bitnet, milnet or some other non-Unix host, so it is recommended to put your return address in any case. For example:

```
sub mymailbox@myhost.mydomain.mil radio-info
or
sub MEMEME01@DMBHST.bitnet radio-info
```

or something like that.

-- Will the material appearing in rec.radio.info be archived somewhere?

Yes. Still firming up details at the moment but here is a preliminary list:

- unbc.edu as maintained by Lyndon Nerenberg <lyndon@unbc.edu>
- nic.funet.fi maintained by Risto Kotlampi <rko@cs.tut.fi>  
saved to /pub/dx/text/rec.radio.info currently stored as  
numbered files.

Effectively this means that anything you post to rec.radio.info will be permanently stored, so your work will not be lost.

-- I have a regular posting with timely information, is there a way to speed up it's delivery, or automate for more convenience?

Yes, there is! It may take a bit of chatter with the moderator, but we are willing to take responsible people and provide them the means of posting the articles directly from their site. We will try everything we can as we fully realize that DX (distant signal) and astronomical data can be somewhat transitory. We are also willing to allow regular posters of information the same courtesy, even if the information is not as time critical.

We refer to this as self-moderation, which is partly based on the model for news.answer. This requires co-operation and good will to be beneficial to the community in the rec.radio hierarchy.

I suggest reading the posting guidelines for more information. I am open to suggestions.

I thank the following individuals for their input into this article:

rec.music.info moderator Leo Breebaart rec-music-info@cp.tn.tudelft.nl  
rec.radio.broadcasting moderator Bill Pfeiffer wdp@gagme.chi.il.us  
Paul W. Schleck, KD3FU pschleck@unomaha.edu  
Ian Klufft, KD6EUI iklufft@uts.amdahl.com

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Mark Salzyn -- Moderator rec.radio.info  
Submissions to: rec-radio-info@ve6mgs.ampr.ab.ca  
Administrivia to: rec-radio-request@ve6mgs.ampr.ab.ca  
\* Requests for information do \*not\* belong in rec.radio.info \*

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Date: Sun, 16 May 1993 09:07:56 GMT  
From: tarpit!tous!jwt!ksj@uunet.uu.net  
Subject: What is circular polarization?  
To: info-hams@ucsd.edu

cvm@zippy.telcom.arizona.edu (Chris Michels) writes:

> 1 - Circular polarization is just the result of satellites spinning and  
> has no real benefit.

Hahahahahahahahaha...no.

> 2 - Circular polarization is intentional and allows ground stations to  
> not worry about the polarization of their antenna because the circular  
> polarized signal will be oriented acceptably at least 50% of the time.

This is essentially correct, although this "50% of the time" assumption  
is wrong. When receiving a circularly polarized antenna, one can use any  
polarization and be assured of receiving a signal.

> More questions, how does using a circularly polarized antenna help.

FM broadcast stations transmit circularly polarized signals, usually.  
Consider that most home FM receiving antennas (dipoles, loops, TV  
antennas, etc.) are horizontally polarized, while almost all mobile  
antennas are vertically polarized (and some are in between!) The only  
mode of polarization that ensures good reception for all is circular.

Scott

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Date: 15 May 93 18:06:53 GMT  
From: dog.ee.lbl.gov!hellgate.utah.edu!caen!zaphod.mps.ohio-state.edu!  
howland.reston.ans.net!usc!sol.ctr.columbia.edu!news.kei.com!ddsw1!indep1!  
clifto@network.UCSD.EDU  
To: info-hams@ucsd.edu

References <2299@indep1.UUCP>, <1993May14.130719.26556@ke4zv.uucp>,  
<1t0mb0INNfb7@mojo.eng.umd.edu>nd.resto  
Subject : Re: Going about building your first transceiver??

In article <1t0mb0INNfb7@mojo.eng.umd.edu> chuck@eng.umd.edu (Chuck Harris - WA3UQV) writes:  
:In article <2299@indep1.UUCP> clifto@indep1.UUCP (Cliff Sharp) writes:  
:>In article <1993May12.063027.15378@ke4zv.uucp> gary@ke4zv.UUCP (Gary Coffman) writes:  
:>:  
:> Not sure what you mean here. I'd gladly jump out of a swimming pool and  
:>grab my 12V, 800A car battery, one terminal in each hand; but I wouldn't  
:  
:Not me! If you have an open wound on each hand, the 12v battery, in contact  
:with each wound, will kill you just fine. It's the current that kills you;  
:it's your skin's resistance that keeps the low voltages from building up  
:enough current to harm you, usually.  
:  
:The resistance of the essentially salt water that is beneath your skin is very  
:low. A 12 volt battery can produce more than enough current through damaged  
:skin to disrupt your heart.

From the Merck Manual, Fourteenth Edition, page 2134:

"Dry, well-keratinized, intact skin may have a resistance of several hundred thousand ohms, whereas the resistance of moist, thin skin is about 500 ohms. If the skin is punctured (e.g., from a cut or abrasion, or by a needle), or if current is applied to moist mucous membranes (e.g., mouth, rectum, vagina), the [body] resistance may be as low as 200 to 300 ohms."

$12V / 200 \text{ ohms} = 60 \text{ mA}$ .

Again, ibid.:

"The maximum current that can cause contraction of the flexor musculature of the arm but still permit the subject to release his hand from the current source is termed the '\_let-go' current\_'. For DC this value is about 75 ma...

"... can induce \_ventricular fibrillation\_ at [AC] currents as low as 60 to 100 mA; about 300 to 500 mA of DC are required."

I rest my case. (I've taken an interest in these things since I began my work history as a TV technician, 27 years ago. Just in case...)

:Now, you say, "Who would intentionally put a wound on each terminal of a 12  
:volt battery?"

:

:Well, it might not be intentional. Consider what would happen if your hands  
:were violently propelled into a 12v source, and your skin cut by the  
:12v sources terminals, or circuitry. It happens to mechanics from time to  
:time, when wrenches slip, or hands get burned and quickly withdraw.  
:(admittedly, the more usual accident is to melt a wedding band, or a metal  
:watch band)

It's usually a combination of the bright spark (scary, makes you jump) and the instantaneous heat of shorting such a high-capacity battery that makes the mechanic withdraw, not the current.

Believe me, I've both wet my arms and chest and held the battery terminals as a demonstration, I've also had the misfortune of shorting a battery with a wrench, screwdriver, jack-handle, etc. Having had both experiences, I'd rather swim with the batteries. Especially because of the danger of explosion inherent in shorting the terminals of a non-sealed lead-acid battery (which generates copious amounts of hydrogen in the presence of a massive spark)!

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|  Cliff Sharp  |      clifto@indep1.chi.il.us   OR  clifto@indep1.uucp   |
|   WA9PDM     |                        Use whichever one works          |
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